

Aleatory

Name _____

Score/master set of directions
clarity

Parts/instructions for each performer
clarity

Focal point if possible

IMAGINARY LANDSCAPE No. 4

BY JOHN CAGE
(PREFACE TO ORIGINAL SCORE)

THE RHYTHMIC STRUCTURE $2 \times 1 \times 3$ X MEASURES OF $4/4$, IS EXPRESSED BY CHANGING TEMPO, INDICATED BY LARGE NUMBERS BEATS PER MINUTE. A NUMBER REPEATED AT THE SUCCEEDING STRUCTURAL POINT INDICATES A MAINTAINED TEMPO.

THE NOTATION OF DURATIONS IS IN SPACE. $\frac{1}{2}$ INCH=QUARTER NOTE. A SOUND BEGINS AT THE POINT IN TIME CORRESPONDING TO THE POINT IN SPACE OF THE NOTES. AN EIGHTH NOTE X INDICATES THE POINT OF STOPPING SOUND AND DOES NOT HAVE ANY DURATION VALUE. FRACTIONS ARE OF A WHOLE NOTE UNLESS OTHERWISE INDICATED. THE PRESENT SCORE IS A ROUGH TRACING OF THE ORIGINAL WHICH WAS MADE WITH A RULER WHICH WAS LATER DISCOVERED TO BE INACCURATE; THE NOTATION MAY BE SAID TO BE, TO SAY THE LEAST, APPROXIMATE!

THE NUMBERS ABOVE EACH STAFF REFER TO KILOCYCLES. IF SUCCEEDING NUMBERS ARE IN DECADE, A LINE CONNECTING THEM INDICATES A GLISSANDO; IF NOT IN THE SAME DECADE, A LINE CONNECTING THE NOTES ON THE STAFF HAS THE SAME MEANING. WHERE SUCH LINES ARE NOT GIVEN AND A CHANGE OF TUNING IS INDICATED, THE CHANGE IS TO BE MADE AS ABRUPTLY AS POSSIBLE.

THE NUMBERS BELOW EACH STAFF REFER TO RELATIVE AMPLITUDE OR, TO BE BE MORE ACCURATE, MANIPULATIONS OF THE VOLUME CONTROL (3 TO 15; 15 BEING MAXIMUM LOUDNESS; 1 BEING TURNED ON BUT INAUDIBLE). WHERE CRESC. OR DIM. SIGNS ARE GIVEN, CHANGES ARE TO BE MADE GRADUALLY; OTHERWISE ABRUPTLY. WHEN SILENCE IS INDICATED, TURN DIAL RAPIDLY TO 1. A SCALE TO FACILITATE VOLUME CONTROL CAN BE MADE FOR EACH INSTRUMENT (ADHESIVE TAPE IS A SUITABLE MATERIAL). DOTTED LINES BELOW THE STAFF INDICATE A CHANGE TO HIGH-FREQUENCY OVERTONES.

THE PARTS DO NOT CORRESPOND WITH THE SCORE AS REGARDS DETAILS OF SILENCE NOTATION, FOR THE REASON THAT, IN THE PARTS, THE USUAL WAY OF INDICATING SEVERAL MEASURE OF REST WAS ADOPTED.

TWO PLAYERS ARE REQUIRED FOR EACH RADIO; ONE FOR TUNING, THE OTHER FOR THE AMPLITUDE AND TIMBRE CHANGES.

Some Rules and Hints for Students and Teachers

John Cage

- Rule 1: Find a place you trust and then try trusting it for awhile.
- Rule 2: (General Duties as a Student)
Pull everything out of your teacher.
Pull everything out of your fellow students.
- Rule 3: (General Duties as a Teacher)
Pull everything out of your students.
- Rule 4: Consider everything an experiment.
- Rule 5: Be SELF-DISCIPLINED!!!! This means finding someone wise, or smart and choosing to follow them. To be disciplined is to follow in a good way. To be self-disciplined is to follow in a better way.
- Rule 6: Follow the leader. NOTHING IS A MISTAKE. There is no win and no fail. There is only MAKE.
- Rule 7: The only rule is WORK!!! If you work, it will lead to something. It is the people who do all the work all the time who eventually catch onto things. You can fool the fans-- but not the players.
- Rule 8: Do not try to create and analyze at the same time. They are different processes.
- Rule 9: Be happy whenever you can manage it. Enjoy yourself. It is lighter than you think.
- Rule 10: We are breaking all the rules, even our own rules, and how do we do that? By leaving plenty of room for "X" qualities [unknowns].
- HELPFUL HINTS: Always be around.
Come or go to everything.
Always go to classes.
Read everything you can get your hands on.
Look at movies carefully and often.
SAVE EVERYTHING. It may come in handy later.
- Rule 11: EVERY DAY MAKE A NEW RULE -- AND BY THE END OF THE DAY, BREAK IT!!!

November, 1982

Chapter 7: ~~Allegory~~ Cage.

4

What follows is the angry cry of a young composer demanding explanation and justification for what he perceives as folly in an older colleague. It is offered as a tossed gauntlet. I challenge you to defend yourself so I may understand you better. And be assured I sincerely prefer understanding over anger.

Mr. Cage: I accuse you for items #1 and #2, and hold you directly responsible for the situation described in item #3.

ITEM #1: You have systematically bastardized the art of music composition through the abuse of language. By redefinition of the word 'music', in a way which says, 'anything and everything is music' you have made the word 'music' meaningless. If everything is music, then *nothing* is music. And therefore, composers can no longer exist . . . there is simply nothing left for them to do.

ITEM #2: You have declared, 'My purpose is to eliminate purpose.' You would have all composers eliminate beauty, sincerity, joy, compassion, expression, and love from their music. You would have all composers ignore these basic qualities in music which humanity has enjoyed for several thousand years.

ITEM #3: As a result of your nihilistic philosophy of music, and your pointless musical-sociological experiments, most young composers have been completely alienated from other musicians and from concert audiences. Concert audiences (in the U.S.) are for the most part, completely disinterested in New Music, having been convinced there is no purpose or sincerity in the work of most 20th century composers. You have caused a near-total collapse of musical culture in this country, and left nothing for us (the young composers) to work with. We have no patrons, and our motives for composing music are constantly suspect.

I believe the Great John Cage, 'grand-father of modern music', is a nihilistic comedian playing to an audience of indoctrinated sheep. His art is not art at all: it is blasphemy.

Sincerely,

Charles Berry

Charles Berry

TO [Mr. Charles Berry]

DATE Nov. 21, 1982

It seems that what angers you are my writings, my ideas. I suggest you drop interest in them and focus on your own. Turn your attention to what you believe in. That is what I did. Thus I found alternative compositional means that would permit the introduction of noises and sounds available through new technology into musical works. I rediscovered the traditional purposes for making music

a) to imitate nature in her manner of operation, and b) to sober and quiet the mind thus making it susceptible to divine influences. Thus I was freed from self expression. Music became a discipline, a way of life. I have always noticed that very few people are interested in New Music. I was 50 years old before there was any supportive acceptance of my work. I am now much older but my work remains controversial as your feelings testify.

Sincerely,

John Cage

Detach and File for Follow-up

PROGRAM NOTES

(Unattributed quotations are those of John Cage)

First Construction in Metal (1939)

"I remain a percussion composer whether I write for percussion instruments or not. That is, my work is never based, structurally or as an instance of process, on frequency but rather on duration considerations."

"I still believe what I wrote in 1939, 'Percussion music is revolution.' New Music: new society. I don't think, as some seem to be thinking, that the percussion section should become like the other sections of the orchestra, more expressive in terms of overtone structure, frequency. I believe that the rest of the orchestra should become as noisy, poverty-stricken, and unemployed as the percussion section (or at least grant its acceptability in musical society). I do not mean anything hierarchical. I just mean accepting the fact that noises are sounds and that music is made with sounds, not just musical sounds. Hopefully, new society based on unemployment. Why have labor-saving inventions otherwise?"

Living Room Music (1942)

When Cage was introduced to the abstract film maker Otto Fischinger (c. 1935), Fischinger talked about the "spirit which is inside each of the objects in this world ... all we need to do to liberate that spirit is to brush past that object, and to draw forth its sound." Consequently Cage found it irresistible to discover how things sounded—to discover what sounds they could produce.

For this work Cage provides his performers with four purely rhythmic parts which are to be realized on household or architectural elements.

"Once upon a time the world was round and you could go on it around and around." —Gertrude Stein.

Cartridge Music (1960)

"Cartridge Music has several people performing programs that they have determined by means of the materials. But one person's actions unintentionally alter another person's actions, because the actions involve changing tone controls and the amplitude controls. So you may find yourself playing something and getting no sound whatsoever."

Imaginary Landscape IV (1951)

The I Ching was used to determine the frequencies of tunings, durations, dynamics, tempos, and the number of superimposed events. The score is meticulously notated yet it defies the reality of its performance—the results will be different in every performance situation depending on the time and place of the performance (compare AM radio of 1952 to AM radio of 1990). Cage is not so interested in a specific result here as he is in a music which is free from individual taste and memory.

"Value judgements are not in the nature of this work as regards either composition, performance, or listening. The idea of a relation (the idea: 2) being absent, anything (the idea: 1) may happen. A 'mistake' is beside the point, for once anything happens it authentically is."

Fontana Mix (Original Tapes) (1958)

"A composition indeterminate of its performance. There are two transparent sheets with points, ten drawings having six differentiated curved lines, a graph having 100 units horizontally, 20 vertically, and a straight line, the two last on transparent material. A sheet with points is placed over a drawing with curves (in any position). Over these the graph is placed and the straight line is used to connect a point within the graph with one outside. Measurements horizontally on the top and bottom lines of the graph with respect to the straight line give a 'time bracket' (graph units = any time units). Measurements vertically on the graph with respect to the intersections of the curved lines and the straight line specify actions and the 20 vertical units of the graph represent different degrees of these. Thus, sound sources, their mechanical alteration, changes of amplitude, frequency, overtone structure, the use of loops, special types of splicing, etc. may be determined.

The quotations used for the program notes were compiled from the following texts:

Cage, John. *Empty Words*. Middletown, Ct: Wesleyan University Press, © 1979. *For the Birds: John Cage in Conversation with Daniel Charles*. Boston/London: Marion Boyers, © 1981. I-VI. Cambridge, Harvard University Press, © 1990. *Silence*. Cambridge, M.I.T. Press, © 1961. *A Year From Monday*. Middletown, Ct: Wesleyan University Press, © 1967. Feldman, Morton. *Essays*. Kerpen: Beginner Press, © 1985. Gena, Peter, ed. *John Cage Reader: in celebration of his 70th birthday*. New York: C.F. Peters, © 1982. Kostelanetz, Richard. *Conversing with Cage*. New York: Lime-light Editions, © 1988. *John Cage*. New York: Praeger Publishers, © 1970. Nyman, Michael. *Experimental Music: Cage and Beyond*. New York: Schirmer Books, © 1974. Also taken from the scores and catalog information as published by C.F. Peters Music Corp. in New York, Cage's only music publisher. Program notes written and compiled by Paul E. Beaudoin.

- electronically prepared chess board. Elected to American Academy and Institute of Arts and Letters.
- 1969 Artist in Residence at University of California at Davis. Publishes *Notations*. Executes first major visual art work: *Not Wanting to Say Anything about Marcel*. Begins work on *Cheap Imitation*. Most interested in working with language, to free it from syntax and fixed meaning.
- 1970 Again appointed fellow for Advanced Studies at Wesleyan University. Composes *Song Books*. Makes increasing use of Thoreau's writings to derive both music and prose.
- 1971 62 *Mesostics re Merce Cunningham*, subjecting over 700 typefaces and sizes to chance operations. Studies writings of Mao Zedong.
- 1972 Produces *Mushroom Book* creating 10 hand written lithographs.
- 1973 Moves back to Manhattan from Stony Point.
- 1974 Again using star maps begins work on *Etudes Australes* for piano thinking of right and left hands as independent of one another. Uses Thoreau's drawings for composition *Score with Parts*.
- 1975 Exploring ways to encourage improvisation while avoiding memory and tastes. Composes *Child of Trees*. *Lecture on the Weather* commissioned by CBC for USA Bi-Centennial collaging texts of Thoreau, film by Frangella and environmental recordings by Maryanne Amacher.
- 1976 Commissioned by the Boston Symphony Orchestra and four other orchestras for Bi-Centennial work, composes *Range* and *Apartment House 1776*. Intensely preoccupied with Joyce's *Finnegans Wake*.
- 1977 Adopts macrobiotic diet on the advice of Shizuko Yamamoto. Begins work on *Freeman Etudes*.
- 1978 Begins printmaking sessions at Crown Point Press.
- 1979 Produces *Rosentorio* at IRCAM in Paris. Gives first nightlong performance of *Empty Words* in the course of a festival of his work in Bonn.
- 1980 Completes *James Joyce, Marcel Duchamp, Erik Satie: An Alphabet*.
- 1981 Composition in retrospect. Begins *Device / 4 Orchestras* for Cabrillo Music Festival.
- 1982 *Postcard from Heroes, A House Full of Music, Fifteen Domestic Minutes, Themes and Variations, Changes and Disappearances, On the Surface*.
- 1983-84 *Fielding Sixes (Improvisation IV)* for four cassette players. *Ryoanji*.
- 1985 *Collection of Rocks*
- 1986 *But what about the noise of crumpling ... , Etudes 2 / 4 Orchestras*, for Suntory Music Festival in Japan.
- 1987 *Europas I/II* for Frankfurt Opera Co.
- 1988-89 Appointed Charles Eliot Norton lecturer at Harvard University. *IOI* for the Boston Symphony Orchestra, *One for solo piano*.
- 1990-91 Continues work on music with no fixed relationship of parts. Creates *Edible Papers* at Rugg Road Paper Co., in Somerville, Mass. *Europas III* and *IV*.
- 1992 *Cage dies.*

JOHN CAGE: A CHRONOLOGY

- 1912 Born September 5, in Los Angeles.
- 1920 Takes piano lessons from his Aunt Phoebe.
- 1928 Graduates from Los Angeles High School as class valedictorian. Enters Pomona College where he stays for two years. Discovers the writings of Gertrude Stein.
- 1930-31 Travels in Europe, studies architecture in Paris. Begins to compose music.
- 1931-32 Returns to the U.S. Continues to write, paint, and compose. Gives lectures on music and art to housewives. Studies with Richard Buhlig. Develops method of chromatic composition.
- 1932-34 Studies with Adolph Weiss and Henry Cowell in New York.
- 1934-35 Studies counterpoint and analysis with Schoenberg privately. Promises Schoenberg he will devote his life to music. Marries Xenia Andreyevna Kashevaroff.
- 1936 Meets film maker Otto Fischinger. Develops methods for writing percussion music, rhythmic structures.
- 1937 Composer/accompanist for Bonnie Bird's modern dance classes at Seattle's Cornish School. Composes and performs percussion music. Delivers lecture entitled "The Future of Music: Credo."
- 1939 Composes *Imaginary Landscape No. 1* for electronic and percussion instrument. "Percussion music is revolution."
- 1940 Syvilla Fort requests music for her dance *Bacchanale*, invents prepared piano for it. Employed in San Francisco on the Recreation Project of the WPA.
- 1941 Teaches experimental music at Chicago School of Design. Composes music for radio play *The City Wears a Slouch Hat*.
- 1942 Moves to New York. Composes *Credo in Us* for Merce Cunningham—the beginning of a lifelong collaboration. Composes *Wonderful Widow of Eighteen Springs* (James Joyce, text) for voice accompanied by fingers or knuckles striking the lid of a closed piano. Meets Marcel Duchamp.
- 1943 Concert of percussion music at the Museum of Modern Art begins to establish his reputation as a central figure of the avant-garde. Meets Virgil Thomson, who becomes a friend/supporter.
- 1944 Becomes music director of Cunningham's dance company.
- 1945 Separates from Xenia, moves to Lower East Side. Studies the philosophy and classical music of India with Gita Sarabhai. Attends lectures on the philosophy of Zen Buddhism by Dr. Daisetz T. Suzuki at Columbia University for two years.
- 1947 Ballet Society of New York commissions *The Seasons*; Cage, music; Cunningham, choreography; Isamu Noguchi, decor.
- 1948 Completes *Sonatas and Interludes* for prepared piano, to express the nine permanent emotions of Indian aesthetics. Teaches at Black Mountain College in North Carolina and presents Erik Satie festival. Meets Buckminster Fuller.
- 1949 Receives Guggenheim Fellowship and an award from the American Academy and National Institute of the Arts and Letters. Travels to Europe and meets Pierre Boulez.
- 1950 Meets David Tudor. With composers Morton Feldman, Christian Wolff, and Earle Brown works to free sounds from memory, taste, and any fixed relationships to each other. Delivers "Lecture on Nothing" at the Artists' Club.
- 1951 Introduced to I Ching (Chinese Book of Changes) which becomes an essential composing tool for much of his later music. Composes *Music of Changes* for piano, based entirely on chance operations.
- 1952 Teaches at Black Mountain College. Creates a 45 minute event, a prototype of the Happenings of the '60s. Composes *Williams Mix*. Collaborates with Robert Rauschenberg on *Automobile Tire Print*. Writes *4'33"* encouraged by Rauschenberg's white canvases.
- 1954 Moves with friends to a small cooperative community near Stony Point, New York, and becomes fascinated with mushrooms.
- 1955 Meets Jasper Johns. Composes *Music for Piano* by noticing imperfections in the paper he uses.
- 1956 Gives occasional classes at the New School for Social Research.
- 1958 25 year retrospective given at Town Hall. *Concert for Piano and Orchestra* scores are shown at the Stable Gallery. Gives lectures on "Composition as Process" and "Indeterminacy." Wins Italian quiz show as mushroom expert.
- 1960-61 Fellow at Center for Advanced Studies at Wesleyan University where he works on his book *Silence*. Composes *Cartridge Music*. Composes *Atlas Eclipticalis* (for orchestra) as a commission from the Montreal Festival Society using astronomical charts and I Ching chance operations.
- 1962 Co-founder of the New York Mycological Society. A six-week tour of Japan with David Tudor.
- 1963 Presents first New York performance of Satie's *Vexations*. Composes *Variations III and IV*.
- 1964 New York Philharmonic conducted by Leonard Bernstein performs *Atlas Eclipticalis* to mixed reviews from audience and orchestra. Travels to Japan, Thailand, India with Cunningham company.
- 1965 Begins writing *Diary: How to Improve the World (You Will Only Make Matters Worse)* to celebrate the ideas of Buckminster Fuller. Becomes President of the Merce Cunningham Company and Director of the Foundation for Contemporary Performance Arts. Composer in Residence at University of Cincinnati. Finishes *A Year From Monday*. Introduced to Thoreau's *Journal*. Organizes first Musicircus at University of Illinois (simultaneous performances of as many unrelated musics as obtainable and practical in the given time and space.)
- 1968 Conceive of *Reunion*, a plurality of continuously activated sound system triggered by moves on an

as possible.' Those designated in this way  correspond to a *rallentando* beginning from 'as fast as possible.'  signifies: a little shorter than the other notes of the group.  signifies: much shorter than the other notes." In Stockhausen's *Refrain* "loudness is indicated by the thickness of the dots (notes) in 6 degrees • • • • • ; the largest corresponds to *mf*. The sign  indicates sound duration: the duration is dependent on the loudness: play on only when the tone has reached the dynamic level indicated by the narrowing of the line.  means hold to extinction, then play on.  written in red is the sign for a velar click: the player, simultaneously with a sound on his instrument, should produce a loud and very short click with the tip of his tongue on his (upper inside) gums."

Shown in Example 169 is a small section of *Liaisons*, by Roman Haubenstock-Ramati. It is written for vibraphone, or for vibraphone coupled with marimbaphone, but it can also be played as a duet or with a previously prepared tape recording. In this case, the recording is started from six to ten seconds after the performer begins. Traditional notation alternates with proportional. In the latter, the distance between the round dots and the horizontal line shows relative pitch, size indicates relative loudness, and the space separating them relative duration. The piece can be played from the left to the right, or vice versa, or up and down. The arrows suggest possibilities of changing directions.

While totally controlled music seems to have run its course, the aleatoric idea continues to attract some composers as a resource for bringing variety into their compositions. In many recent pieces there are sections in which the performers are freed from precise notes or rhythms alternating with sections in which the composer is in control in the traditional manner.

Electronic Music

While all of the preceding developments were taking place, another path to the music of the future was being explored—electronic music. After years of anticipation by impatient composers and theorists who felt that familiar tonal resources had been exhausted, the way was found to eliminate conventional instruments and conventional sounds. Some of the earlier moves in this direction have already been mentioned—the desire of the Futurists in the early years of the century to include noise in their music, and the experiments using microtones. As early as 1907, Busoni predicted the use of electrically produced sound, as did Leopold Stokowski in 1932 and Carlos Chávez in 1937. John Cage and

• Settlers and Explorers

EXAMPLE 109, *Linions* (ROMAN HAUBENSTOCK-RAMATI)*

The image displays a musical score for the piece "Linions" by Roman Haubenstock-Ramati, organized into a 3x3 grid. The grid contains musical staves and geometric diagrams. The top-left cell features a geometric diagram with points and lines. The top-middle cell contains a musical staff with a complex, dense melodic line. The top-right cell is empty. The middle-left cell contains a large, hollow arrow pointing to the right. The middle-middle cell contains a musical staff with a complex, dense melodic line. The middle-right cell contains a geometric diagram with points and lines. The bottom-left cell contains a musical staff with a complex, dense melodic line. The bottom-middle cell contains a musical staff with a complex, dense melodic line. The bottom-right cell contains a large, hollow arrow pointing to the right.

* Copyright 1961 by Universal Edition (London) Ltd., London.

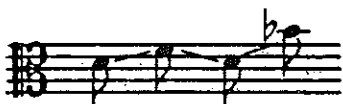
• Part Three 1950 • 1975

cause of the extreme flexibility with which they are joined. Even the slightest breeze changes the overall shape, which is "ever the same but ever different." A photograph of a mobile would be comparable to a recording of one of Brown's compositions. It would be a record of one possible shaping of a rich and malleable basic material.

NOTATION PROBLEMS IN ALEATORIC MUSIC

It is easy to see why conventional notation is no longer serviceable for music in which the performer has several possibilities from which to choose. Musical notation, for all its inadequacies, tells the performer what notes to play and establishes the rhythmic relationships between them. If these matters are left undetermined until the moment of performance the composer must devise a new system of signals for the performer.

As a result, the scores of aleatoric compositions bear little resemblance to conventional scores, and each piece contains elaborate directions for the symbols chosen by the composer. For example, Berio's *Tempi Concertanti* uses proportional notation. In this kind of notation, the space separating the notes indicates their separation in time. Thus, notes further apart on the page are separated by a longer time interval than notes close together. This separation is relative and unmeasured, of course, because pulse in the sense of an underlying beat does not exist. In the same piece the composer uses this notational device to ensure a chance performance:



The directions read: this figure "can be read starting from any point whatsoever and going left to right or vice versa. The pattern may be repeated several times—always as fast as possible and within the limits of proportionally indicated duration." In this score the notes without stems are played legato and notes with stem and flag (♩) are played "freely." Small notes (like old-fashioned grace-notes) are played as "fast as possible."

In *caractères*, by Henri Pousseur, notes without stems "take up the entire duration of the metric subdivision in which they occur. If they are to be played staccato, the rest of the duration is held out as silence. Groups of notes designated in this way  correspond to an accelerando up to 'as fast

• Settlers and Explorers

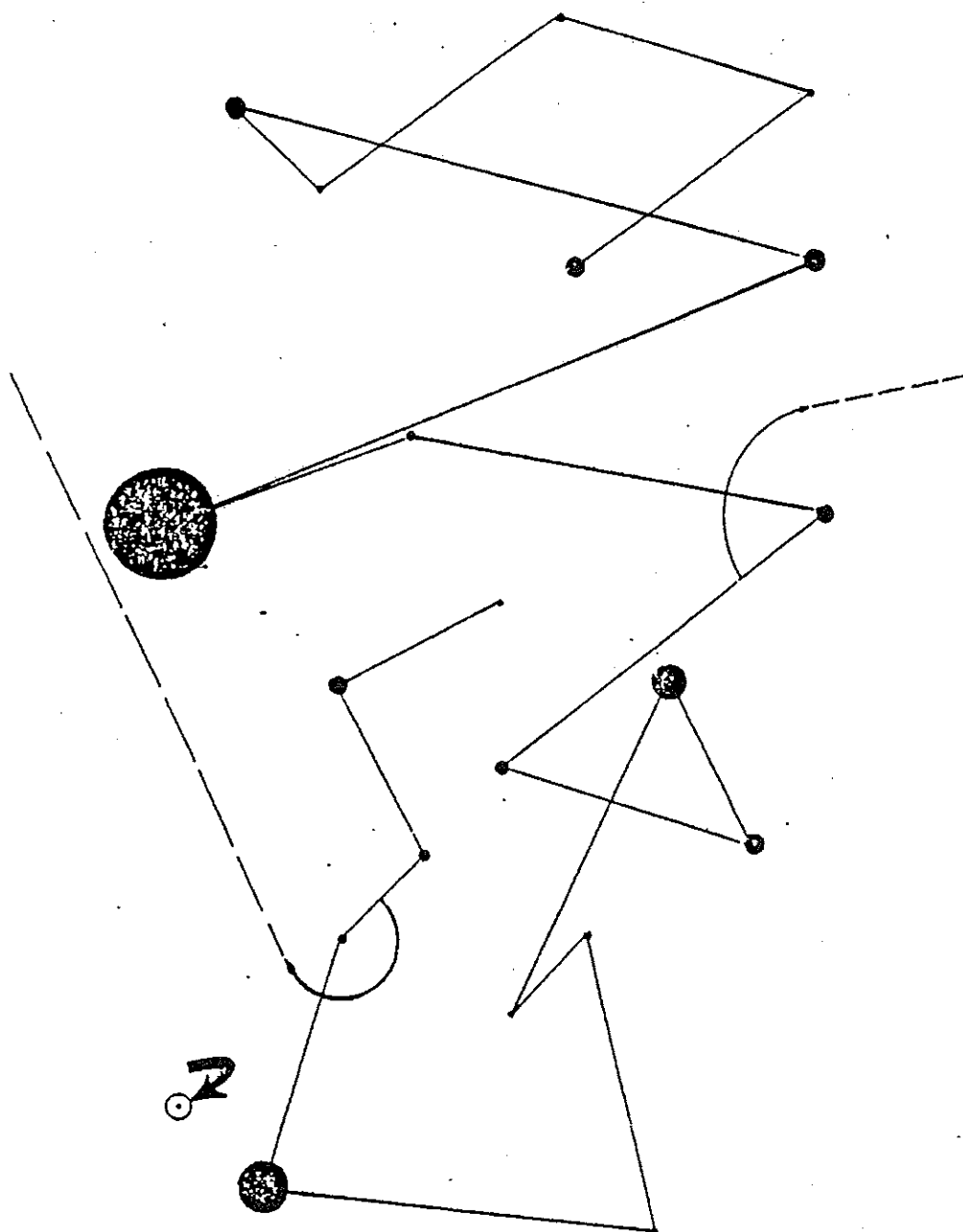


Figure 9.11. John Mizelle: *Radial Energy I*. Permission granted by Source: *Music of the Avant-Garde*, Composer/Performer Edition, Davis, California.

COMPOSER AND PERFORMER Indeterminacy

a "chance" score -- at no time is there a predictable outcome

Homage to John Cage -- Nam June Pail

Pail leaps off stage to Cage's seat, removes Cage's jacket, shreds it with long scissors, cuts off his necktie, pours a bottle of shampoo over his head, marches out of the hall, later telephones the audience to tell them it's over

Radial Energy I -- John Mizelle

choose any sound source

any number of performers

any place

any interpretation

uses sine chart

silences between sections last 6, 7, 9, 12, 15, 17, 18, 17, 15, 12, 9, 7, 6 YEARS
during the first phase (of 150 years)

more? 382 years -- durations computed by adding, squaring, cubing, etc.

area of performance can be expanded to other planets or galaxies

when all of time and space are transformed into sound, the piece
(and the universe) ends

Straits of Magellan by Morton Feldman

It is a graph piece with unspecified notes, but specified durations.

The score is written on coordinated paper, with each box equal to MM 88.

The player enters on or within the duration of each box (unless the box is empty, in which case he/she is silent). The number of sounds to be played within each box is given. Register and choices of notes are for the most part free, with occasional indications that high or low register be used within a specific box. The color (flutter-tongue, harmonics, etc.) is given, as well as the dynamics (very low throughout).

COMPOSER Indeterminancy

use of chance operation by composer in creation of the piece
predictable in performance; possible use of traditional notation

Music of Changes -- John Cage

coin tosses and I Ching ("it" wrote it)

26 charts to indicate duration, dynamics, tempo, etc.

1898 -- Mauricio Kagil

11 to 17 players, taped or live; piano and percussion are required (any percussion)
directions -- "variation on a motive, sung increasingly wrongly"

PERFORMER Indeterminancy

event -- when 2 sounds differ in timbre, structure, dynamics

-- avoidance of our concept of "melody"

-- like a mobile in art, the shape, color, design is the same, but the order
and angle are always changing, "ever the same, yet ever different"

Klavierstück XI no. 7 by Karlheinz Stockhausen

comes on a roll 37" by 21" with attached wooden stand

there are 19 printed fragments, to be played in any order

with any of six different speeds, dynamics, and articulations

performer is to glance and play whatever catches the eye

Caracteres by Henri Pousseurs

for piano solo, consisting of six double pages,

each with several groupings of notes

four single pages with groups of notes and three cutout "windows"

are placed at random among the printed sheets

performer plays what accidentally appears before his/her eyes, which

may be printed on the page, or seen through the "window"

Strategie by Yannis Xenakis

-- uses mathematical theory of games

-- 7 basic sound structures

-- 2 orchestras (44 each) on opposite sides of the stage

-- IBM 70690 computer produces 400 combinations of sounds

-- electric scoreboard is placed at end of stage

-- rules set by composer's regulations

-- points are gained or lost and recorded by scoreboard

-- at the end of a certain time or certain number of exchanges agreed upon by
conductors, one group is declared the winner and given a prize

ALEATORY

Indeterminacy:

- the outcome is not foreseen
- audience realizes there is no intention
 - difficulty in accepting the concept, not the sound
 - idea rejects 14 centuries of Western concept of music
- let sounds HAPPEN
 - free sounds from composer's control
 - composer separates himself/herself from creation through "forced stupidity"
- indeterminacy implies art as process
 - process has no beginning, middle, or end
 - each new performance or circumstance produces continually variable ideas

Aleatory as improvisation -- William Hellerman

"Improvisation is concerned with the realization in real time of defined artistic goals.
Aleatory, by its very nature does not recognize the existence of goals.

"Both aleatory and improvisation are different from 'classic' music.
Both leave choice of materials in the piece to the performer.
Both are thought of as 'free,' but

"Improvisation, at its highest, seeks meaning through spontaneity, while
Aleatory declares meaning to be spontaneity."

Paul Hindemith: Of Aleatory -- "one of the ugliest modern musical diseases"

Pierre Boulez: Of Aleatory -- "Can you imagine a card game with absolutely no rules?"

Some tools for Aleatory music:

I Ching
dice

Fibonacci series
magic squares and cubes

geometric shape

16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1

Thousand Symphonies -- Dick Higgins

1000 pages of blank orchestral manuscript paper blasted with machine gun
("written" for police or soldiers with their instruments)

The Infinite Square

for any number of instruments
Commissioned by Gloria Morris

Aurelio de la Vega

Duration: Indeterminate

Play in groups of any number of instruments concentrically or ex-
centrically in any direction.

The musical score is presented in a square format, with staves arranged in a grid. The score is written for any number of instruments, with the notation indicating various musical elements such as notes, rests, and dynamics. The score is organized into four main sections, each represented by a square frame. The frames are arranged in a larger square, with the outermost frame being the largest and the innermost being the smallest. The notation within each frame is complex, featuring many notes and rests, and is often accompanied by dynamic markings like *f* (forte) and *p* (piano). The score is designed to be played in groups of any number of instruments, either concentrically or excentrically, in any direction. The overall layout is highly structured and visually striking, reflecting the title 'The Infinite Square'.

W r i T e



P

I

E

O F

C

E

c H  N c e M u s I c

Convergence #1

Kenneth Maue

One player reads a stream of numbers within the range 6-12, randomly sequenced, at a steady tempo. Other players play the spoken numbers. Beginning on a unique spoken number, each player makes a sound, then counts the same number of spoken-number pulses as the spoken number on which he began, then sounds again, counts again, sounds again, etc. Example: in the following stream of numbers, a player sounds on the underlined numbers: [the first 8 is randomly chosen]

8 12 11 8 7 10 10 6 12 7 10 9 6 8 11 10 12 12
9 7 6 7 10 8 10 8 7 10 11 9 11 6 12 10 6 9 8 10 12 6 9 11 7 8 etc.

For sounds, use percussion instruments of long decay. For practice, players can go through a series like the one above in unison. Then for performance, they begin on successive spoken numbers and proceed until they converge into unison. The whole process can be repeated any number of times. The reader can vary the tempo of his number reading in any way, so long as changes are made within the other players' capacity to change tempos without losing their places.

Bell Set No.1

Michael Nyman

For at least four performers playing any combination of pitched or non-pitch highly resonant metal percussion instruments.

Any performance must use all four rhythmic structures, which are played simultaneously, one part per performer.

Each note of each 3, 4, 5 and 6-note group must be assigned to its own instrument which plays only that note throughout.

Instruments may be assigned in families (e.g. the 4-note rhythm may be played on cymbals of different sizes, the 5-note on gongs, etc.) or as mixed groups.

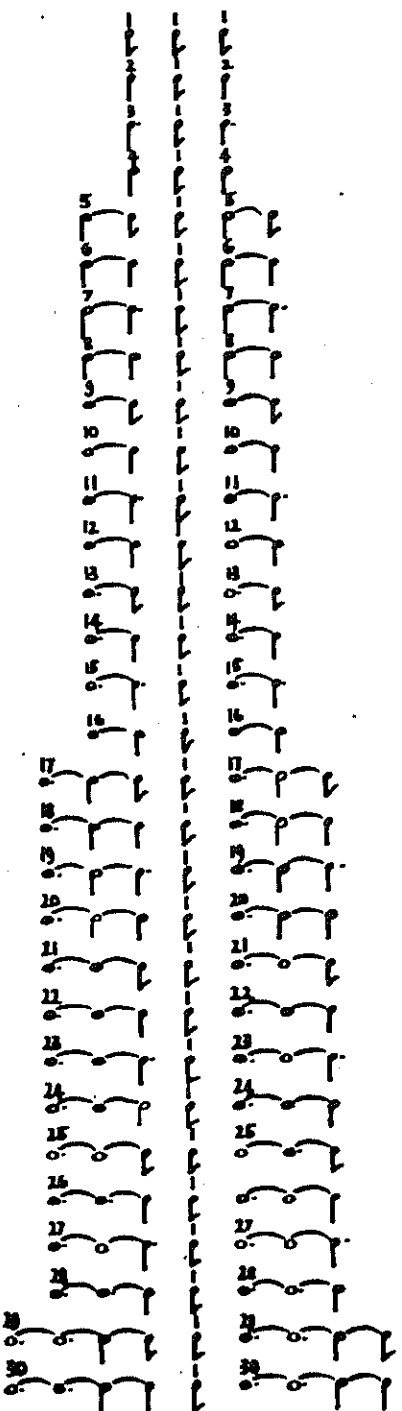
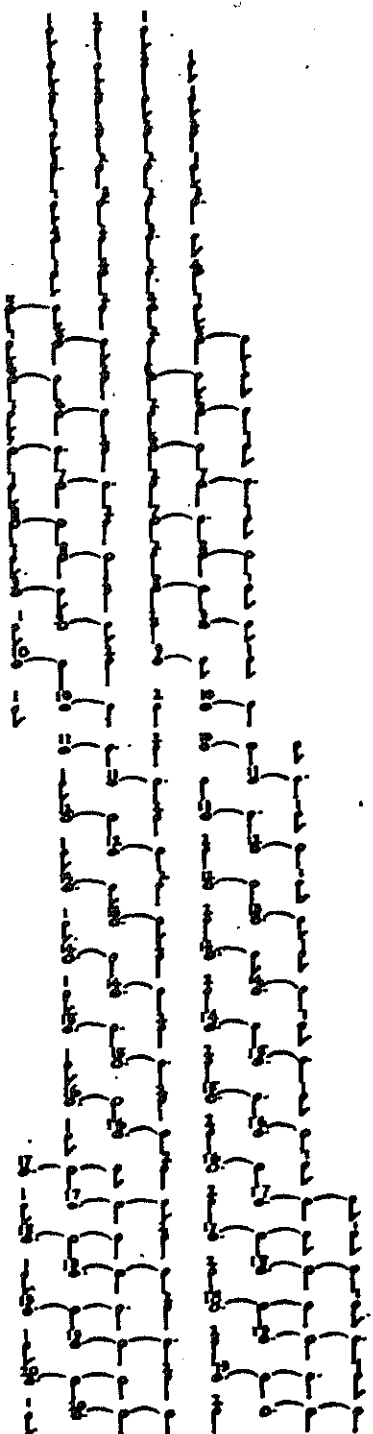
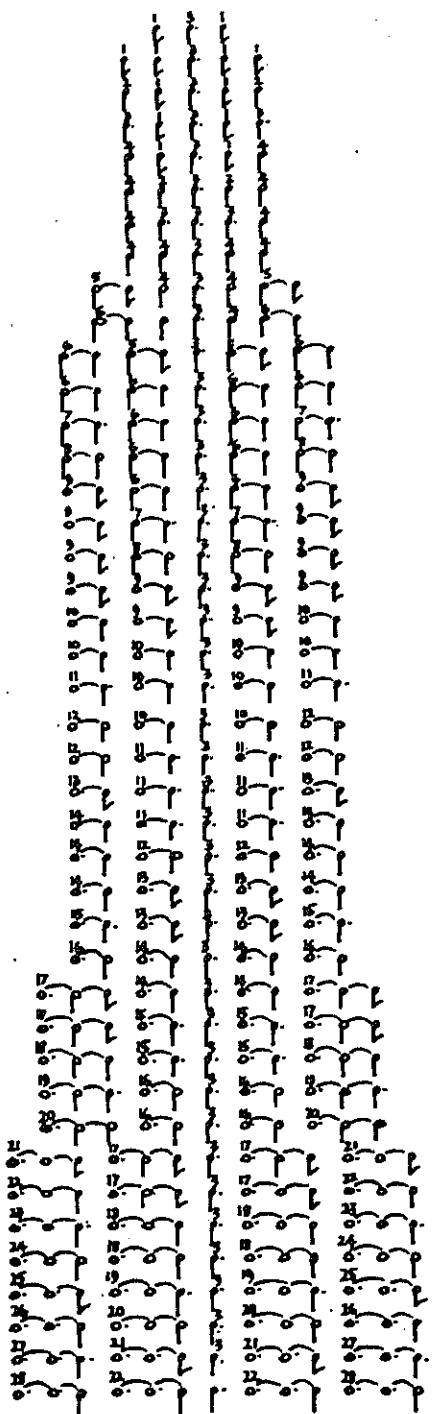
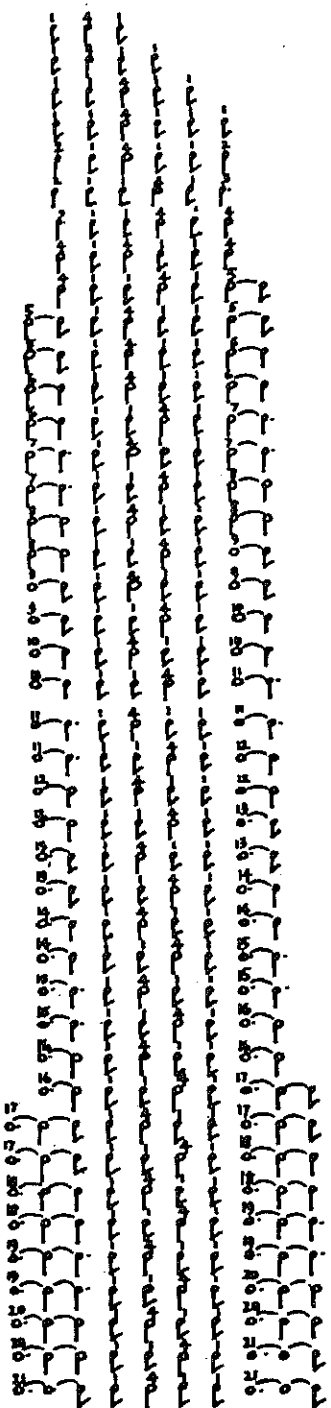
Dynamic — each note to be struck as firmly as possible with hardest suitable sticks.

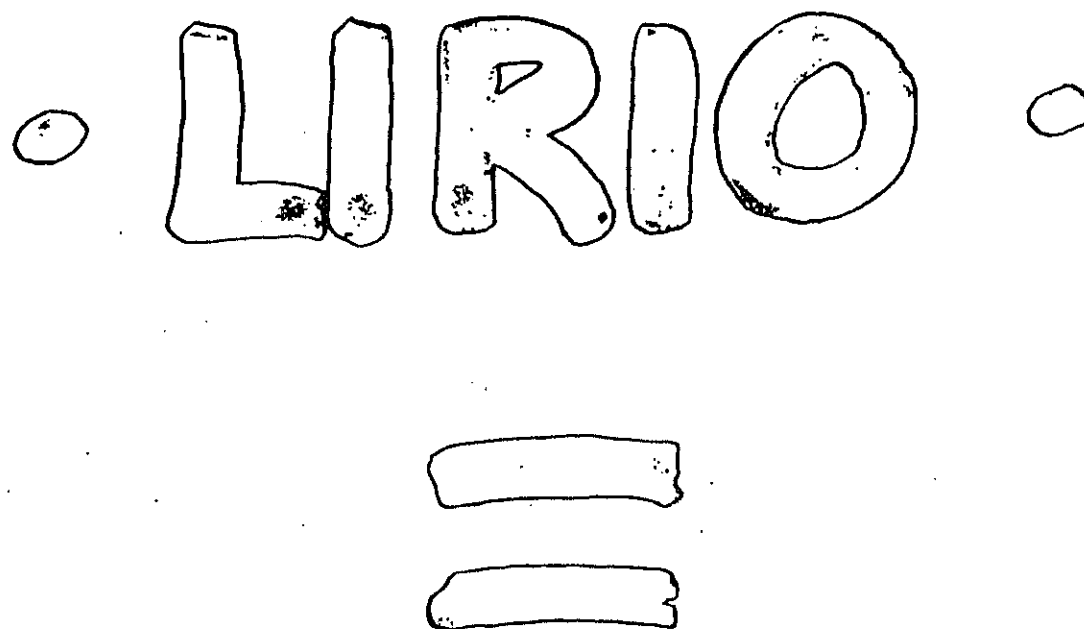
Tempo—anything from $\text{♩} = c.100$ to $\text{♩} / c.200$ (Methods, inaudible to the listener, may have to be devised to ensure that all players maintain this constant pulse.

Players all begin together and end together, either after a pre-determined duration or after each player has reached his/her last figure (preferable the latter).

Each rhythm is to be repeated over and over before moving without a break to the next. Where there are more than four players and one or more of the parts has to be "doubled", no attempt at synchronisation between these identical parts should be made.

Alternative versions are possible for keyboard and plucked instruments that have strong attack and long decay — such as piano, electric and acoustic guitar, vibraphone, harp, etc.





Under a blue light, roll very softly on a large gong for a long duration.



Harold Budd

Guadalajara : 24 : viii : 71

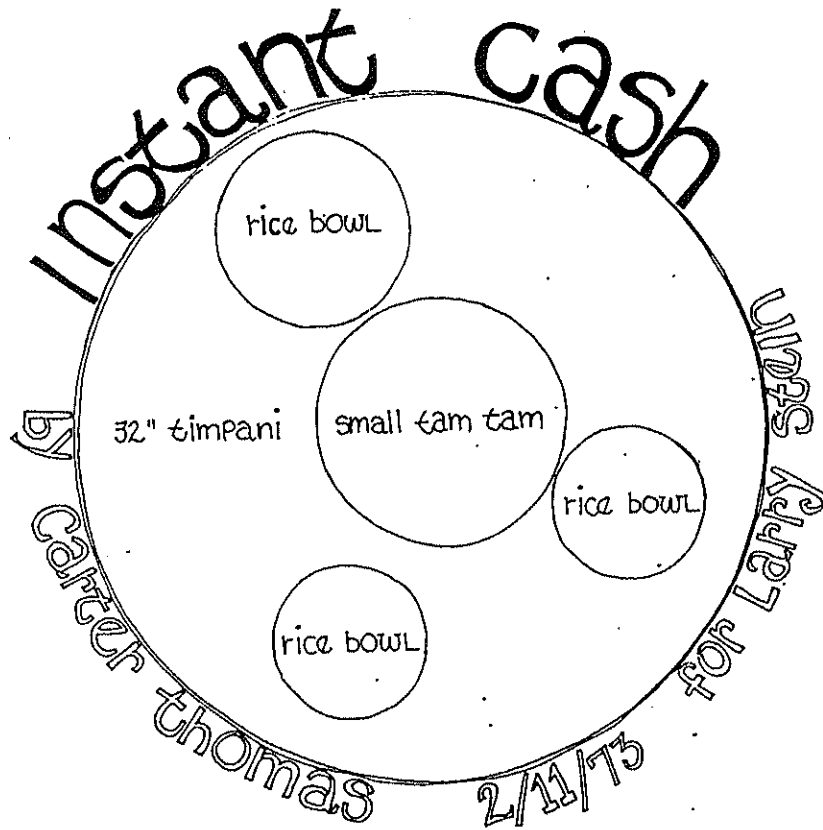
MAXIMUSIC
for Max NeuhausJames Tenney²⁰**MAXIMUSIC**

for Max Neuhaus

- (1) Soft roll on large cymbal; constant, resonant, very long.
- (2) Sudden loud, fast improvisation on all the other (percussion) instruments except the tam—tam(s)—especially (but not only) non-sustaining ones; constant texture; continue until nearly exhausted from the physical effort, but not as long as (1); end with tam—tam(s) (not used until now)—just one blow, as loud as possible.
- (3) Same as (1), but now inaudible until all the other sounds have faded; continue ad lib but not as long as (1) or (2), then let the cymbal fade out by itself.

James Tenney
6/16/65

From *Postal Pieces 1954-71*. Copyright© 1965 by James Tenney. Produced by Marie McRoy at the California Institute of the Arts. Used by permission.



instructions
cash needed:

17 pennies
12 nickels
9 dimes
10 quarters
5 half dollars
2 silver dollars

- 1) use 32" timpani, 3 different sized rice bowls, 1 small tam tam or Gong.
- 2) Player strikes timpani with hands, or sticks of his choice.
- 3) Player continues to depress pedal at whatever rate he pleases.
- 4) while doing this, the Player should drop coins one at a time (any order of coins) into a rice bowl or tam tam of his choice and improvise freely.
- 5) anytime after all the coins are dropped, the piece may end.

Family of Bells

Assemble a family of six objects with bell-like properties. These bells should resemble each other in sound and appearance, though they need not be of identical shape or material. They should be chosen mainly for their beauty of sound and qualities of resonance. They should each be of a different pitch and should not be too heavy.

Arrangement

Two players sit cross-legged facing each other, the bells displayed on a cloth in a line between them. The order of the bells is up to the players, but the lowest in pitch must be suspended or must rest on supports that do not damp its resonance (that bell is marked X below). The bells are arranged as follows:

Player 1
A-B-C-X-D-E
Player 2

Playing

One player begins by striking Bell X with a steady pulse. The other player picks up Bell A (or Bell E), brings it in front of him, strikes it once with a mallet and replaces it. Then without breaking the pulse he takes over the playing of Bell X. The first player then picks up the bell on the opposite side of the line and plays it as described for A, afterwards taking over on Bell X. The other player continues with Bell B (then C, D, etc.), the first with D, C, etc. Whenever a player comes to the end of the line he reverses directions without repeating the end bell. Bell X sounds constantly.

Moving Bell A

Each player must count one number for each bell he plays up to 5 (go to 1 again). Whenever the count of 5 coincides with playing Bell A, that player puts Bell A down next to E. He then has a choice, when his turn comes, of continuing with either Bell B (then C, etc.) or with Bell E (then D, etc.). The pattern of these choices creates the formal variety and repetition in the piece. When next a player comes to Bell A on his 5th count, he will replace it in its original spot next to Bell B.

Ending

The players must devise their own ending: perhaps when one has moved Bell A three times; perhaps when they recognize a repeat in the series. If the piece is used as music for a dance, that could dictate the ending.

Bell X

The pulse rate, dynamics and timbre of Bell X should vary slowly over long time spans with no change noticeable as a player takes over on Bell X.

Style

All gestures, including the entrance of the players, should be quite deliberate and formal, and though the piece is undemonstrative, each player may develop a style of playing which is comfortable, dignified and expressive of himself.

Valid for Life

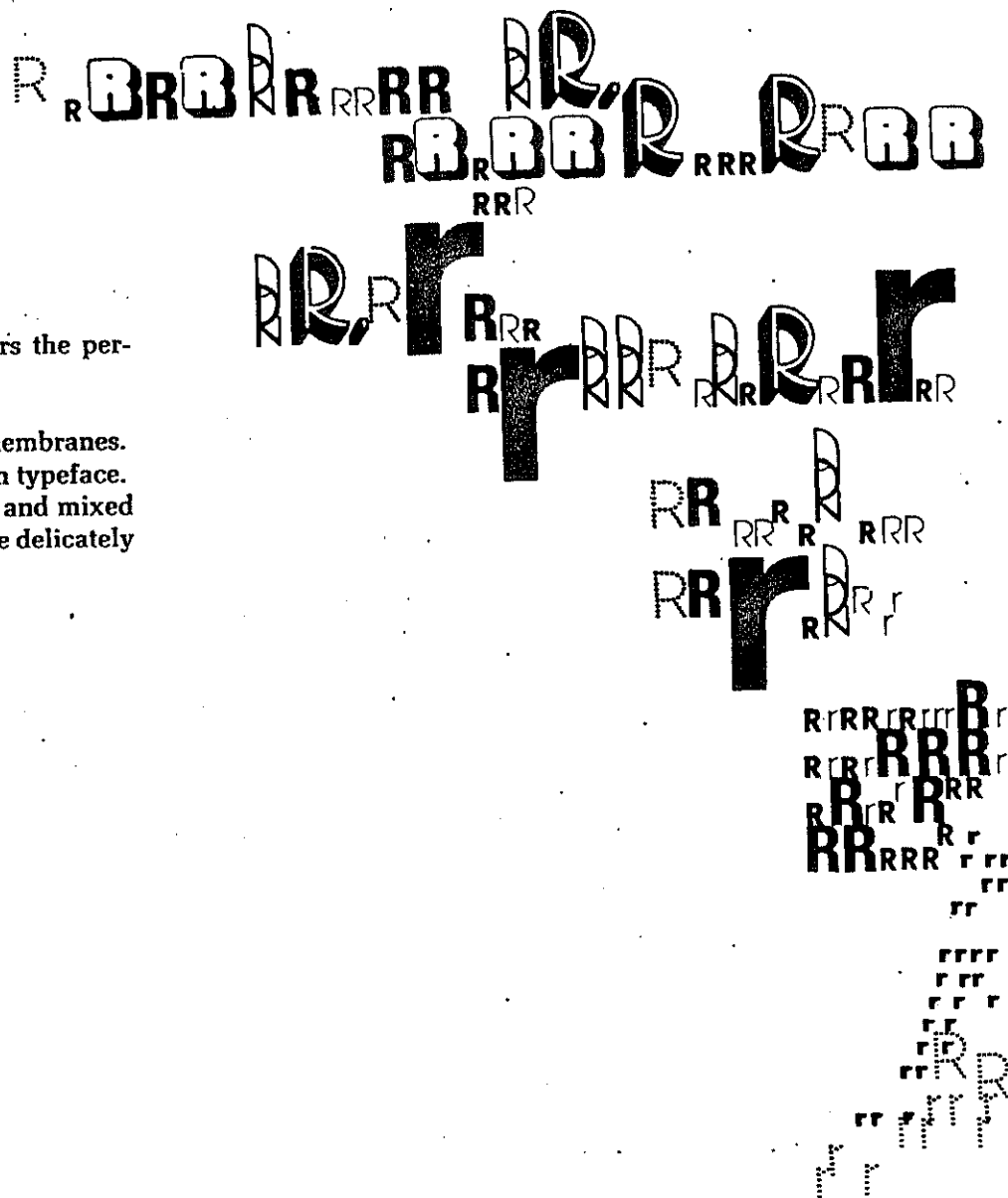
Beth Anderson

Trio for two large matching strung things (such as piano or harp)
and one set of large membranophones.

All instruments are played with huge velvet beaters the performers make themselves.

Play a long, soft, full, round roll on the strings and membranes.
Variations in the roll are derived from the changes in typeface.
Several performances may be layered in the studio and mixed
live with the performers. All performances should be delicately
amplified.

Minimum duration is 10 minutes.
Maximum duration is free.



Members of the Association Family meet quite often before, during, and after concerts for the benign purpose of breaking bread and otherwise refreshing themselves. This piece is for them.

Three Proposals for Disposition of Personae During Performance

1. The stand-up buffet
2. The sit-around table
3. For a larger group, a re-creation of the Last Supper, wherein the Director is betrayed by one of His Disciples.

(Choose one of the above mentioned proposals, or in similar spirit, fabricate an analogous situation, keeping within the nature of the goings on.)

Each member of the group brings one type of roll to the proceeding, to present to colleagues.

Some Possibilities

Onion Roll
Hamburger Bun
English Muffin
Croissant
Popover
Kreplach
Bismarck Roll
Pork Roll
Piano Roll
Jelly Roll
Hot Cross Bun
Bran Muffin
Parker House Roll
Scone
Ravioli
Bagel
Tootsie Roll
Bank Roll
Poppyseed Roll
Cinnamon Bun
Corn Bread Muffin
Brioche
Gem
Won Ton
Kaiser Roll
Clam Juice Roll
Argyol

There will be opportunities for the players to eat the rolls in the context of a performance. To assist digestion (roll-aid) it is suggested that players manufacture sonic roll correlates which 'represent' the physical and metaphysical shapes of the received gift riddits. Other salutary uses ought to be found for inedible items such as Bank Roll, Piano Roll, and Argyol.

Remember: To Play Roll is to Play a Role

(For smaller ensembles it may become necessary for some players to perform more than one role, though this solution is not recommended for dieting persons. However, one must not underestimate the psychodramatic potential.)

There are four classifications of instruments participating in Roll:

a. Glass; b. Skin; c. Metal; d. Wood.

Twelve differently tuned specimens of each category, one each per role, are called for. These instruments can be rolled by a variegated series of beaters, including snare drum sticks, brushes, felt sticks, assorted mallets (aforethought), and sundry other devices dreamed up for any given occasion.

A fifth sounding category is necessary. It is marked off in the score by brackets— (Stones)—stones for rolling. Marbles are certainly qualified and convenient (perhaps shaken when placed inside pots or plates), but this suggestion need not rule out choices arrived at for other compelling reasons.

A duration for Roll is predetermined by the Director and/or a Host ("I will fetch a morsel of bread, and comfort ye your hearts; after that ye shall pass on.") This will permit players to regulate their actions in time, thereby leading to an amicable coordination of intent. For example, the stave marked 9/9 in the score will have that percussionist stretch the role throughout the total agreed-on duration; he (she, it) will only be able to eat (and drink) prior to or after completing the task. The 8-1/9 player would play his part twice—first in the proportion of 8/9 of the total agreed-on duration, then repeated in 1/9 of the total. This player can refresh himself prior to, in between the two repetitions, and after his appointed rounds. Similarly the 4-3 2/9 player does his part three times and has an additional refecation option thereby. Although it seems that it will be easiest to perform the composition in durations related to multiples of nine, this should not discourage anyone from making computations of time. ("Haste makes waste, but he who hesitates is lost.")

There is a series (the Roll Series) of twelve definitions of the word Roll listed on the back of this page. These are to be assigned to each participant to guide him in a metasomatic alteration of the material in the given musical mix. Too, there are twelve literary quotations, also to be distributed, one per celebrant, to facilitate a harmonious nomographic course of events.

The Director, in any case, is to present an orderly procedure for a well-regulated meal. The Betrayer's role ("if there need be one" says the once born soul) is to confute order and to disrupt the Director's program to procedure—though in a very subtle and saintly manner. His identity must not be blatantly revealed; it should be apparent only to the perspicacious observer.

On the score itself, each player is provided with six or seven synonyms for the word **Roll**. These are to be utilized as performing directions in the manner of common practice terms, such as *allegro*, *moderato*, *appassionato*, etc. The sonic resultant envisioned by the composer is of a finely textured, quasi steady-state, somewhat complex roll of finite duration, to be experienced in a communal setting ere the cock crows.

As to the final crescendo, stage lighting may be used to underline this pre-dawn happening.

ROLL

for 3 to 12 percussionists

Edwin London

(1973)

Written for the University of Illinois Percussion Ensemble, Thomon Siwe, Director

NOTE: It is a violation of the U.S. Copyright Law to reproduce copies of this composition, in whole or in part, by any means and/or for any purpose.

*The crescendo is to be played the last time only, the other times *mp* throughout.

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Chapter 7: Aleatoric ROLLS SERIES I—definitions

1. ROLL... a rapid and uniform pulse produced by alternate strokes of drum sticks. This phenomenon is perceived by the ears as being a continuous sound.
2. ROLL... a small loaf of bread; more properly speaking, to be one which has been rolled over or doubled before baking.
3. ROLL... a scroll which lists names used to ascertain whether one or another of a set of persons is present.
4. ROLL... a piece of parchment which is written upon or is intended to contain writing and is convenient to handle or carry when rolled up.
5. ROLL... a small quantity of tobacco leaves rolled up into a cylindrical mass.
6. ROLL... a round cushion or pad of hair or other material, forming part of a woman's head-dress.
7. ROLL... an instrument used for crushing clods.
8. ROLL... a loud, continuous, reverberating peal of thunder.
9. ROLL... to move or impel an object forward on a surface by making it turn over and over.
10. ROLL... to pronounce or sound with a trill.
11. ROLL... to turn the eyes in different directions with a kind of circular motion.
12. ROLL... to perform a periodical revolution.

ROLL—The character which one undertakes or assumes with reference to the part played by a person in society, life or drama.

ROLLS SERIES II—quotations

26

1. "Happy King, Whose Name The Brightest shines in all the rolls of fame."
—Alexander Pope
2. "Whoso diggeth a pit shall fall therein: and he that rolleth a stone, it will return upon him."
—Proverbs XXVI: 27
3. "I hear the roll of the ages."
—Tennyson
4. "Moverover the Lord said unto me, Take thee a great roll, and write in it with a man's pen concerning the Maher-shalal-hash-baz."
—Isaiah VIII:1
5. "I came home rolling resentments in my mind and framing schemes of revenge."
—Swift
6. "Jesus the same night in which he was betrayed took bread."
Corinthians I 11:23
7. "The organ rumbled and rolled as if the church had got the colic."
—Dickens
8. "Now when the even was come, he sat down with the twelve. And as they did eat, he said, Verily I say unto you, that one of you shall betray me."
—Matthew 26:18
9. "Deep woes roll forward like a gentle flood."
—Shakespeare
10. "Roll me over, Yankee soldier."
—Marlene
11. "Eyes which rowle towards all, weep not but sweat."
—Donne
12. "And when I looked, behold, an hand was sent unto me; and lo, a roll of a book was therein; And he spread it before me; and it was written within and without: and there was written therein lamentations, and mourning, and woe. Moreover he said unto me, Son of man, eat that thou findest; eat this roll and go speak unto the house of Israel. So I opened my mouth and he caused me to eat that roll. And he said unto me, Son of man, cause thy belly to eat, and fill thy bowels with this roll that I give thee. Then I did eat it; and it was in my mouth as honey for sweetness."
—Ezekiel 2:9-10, 3:1-3

**to the last drop
from visible musics**

(an eye score)

the score as a sore to be rubbed

one of a project of visible musics

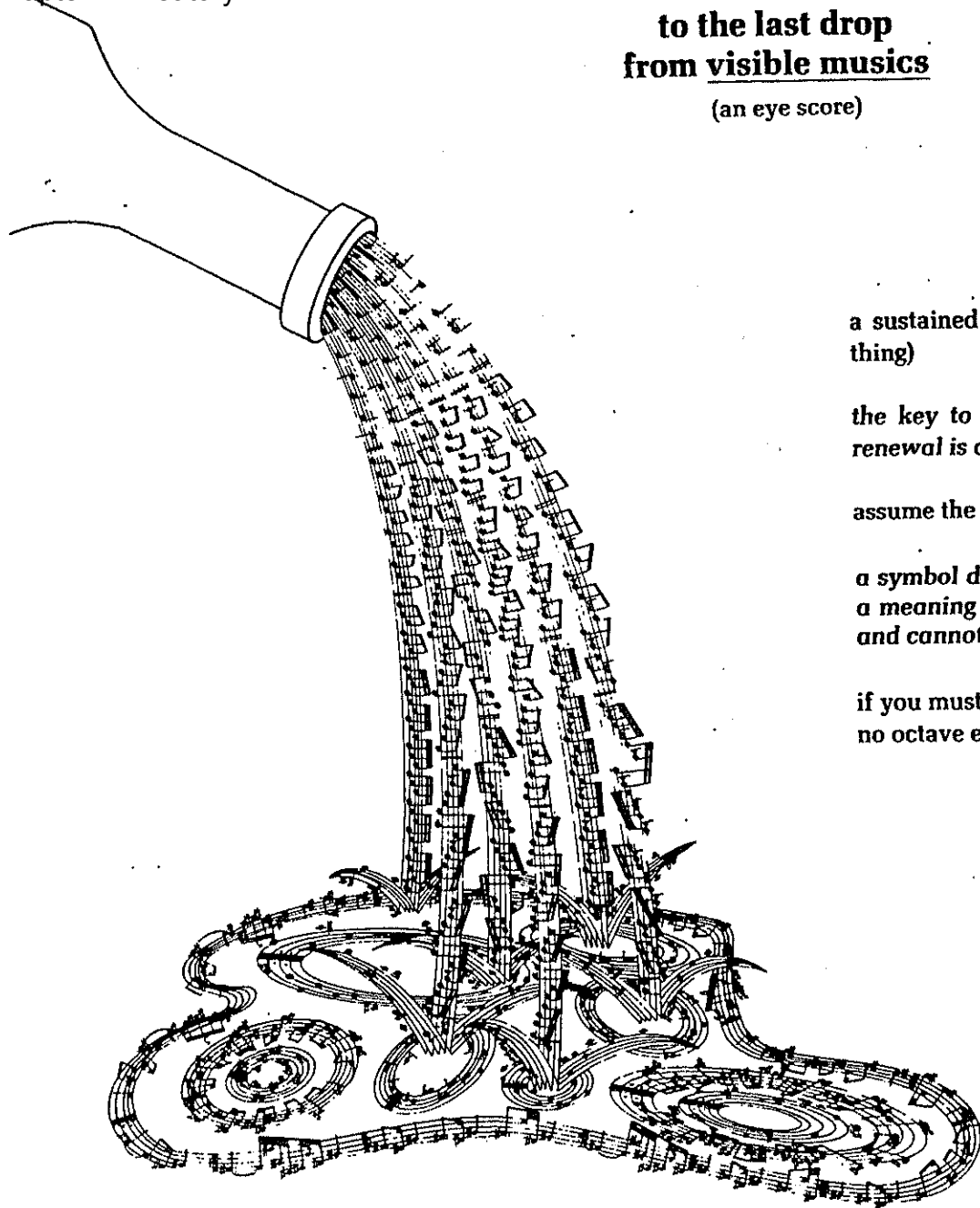
a sustained flashed slowed down for absorption (an eye/ear thing)

the key to the process is one of renewal and the source of renewal is always personal

assume the treble clef

a symbol does not define or explain it points beyond itself to a meaning that is darkly defined yet is still beyond our grasp and cannot be expressed in the familiar words of our language

if you must transpose transpose everything the same there's no octave equivalency



Chapter 7: Aleatory

syntax is the heart of devination—to locate the function of a thing in the structure of the process

let it flow (of course) and get a lot of water in there (i love the sound of pouring water (glug-glug)) a tape perhaps

transformation is the peeling away of the irrelevant—a matter of time

open with the pouring it can be a canon always repeat (the “double lines” indicate optional repeats within the flow) for example one player enters doing the first “bar” then the second on the second stave etc gradually moving down always repeating or all enter together as a group glug repeating each “bar” a number of times

a gesture is a deliberate act which is undertaken for the power which comes from making a decision

next is the splash event quick and out of measured time

sounds are there to distinguish the silence

then the puddle events with each player moving to the puddle of his pour (and splash) directly do these by playing over and over the first three notes then adding the fourth note then the fifth etc until all the notes in the puddle are being played and then remove the first note then the second etc

hell is false repetition monotony is constant variation

go on to your next puddle spreading out in the same fashion as before and then to the final outside puddle event with everybody at different points internally repeating the indicated groups and moving on as they feel it flow away (out) in this fashion

there are no connections only relations the only relation is difference

i like the idea of using tuned bottles marimbas or vibraphones would work too

killing time to let sound live

the point is to use your imagination only read from don't read into the thing as itself not depicted elaboration is always confusing simple direct things coming from your personal experience triggered by the score image will always be real and understood

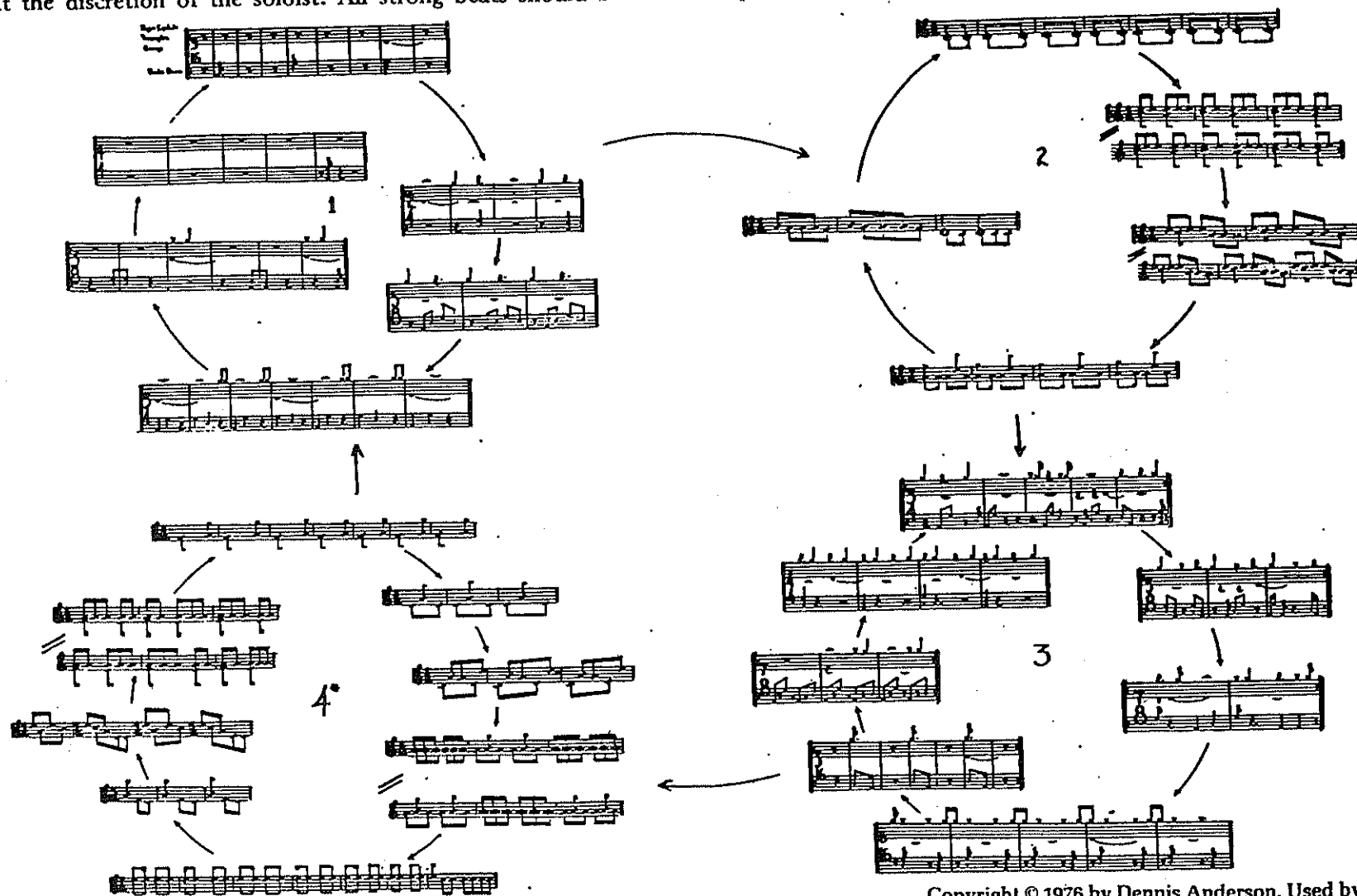
if music is only music it's not music (it's a kind of muzak)

all quotes from my notebooks some mine some paraphrases and some other's I don't know who—my apologies

Gamelan

Instructions

This piece is for solo marimba and percussion ensemble. All players begin on circle corresponding to their number. Soloist waits for Player 1 to finish his circle. Each player in the ensemble plays his circle and moves around the big circle to the next circle. Accompaniment dynamics should not reach above *mf*. Upward stems indicate right hand — all of these notes are $\flat$. Downward stems indicate left hand — all of these notes are $\sharp$. Soloist repeats measures 221 to 230 until the entire ensemble is in unison on that section. As soon as measure 221 is played in unison, the ensemble moves on to the end. Marimba dynamics are to be added at the discretion of the soloist. All strong beats should be accented. [The four ensemble parts are reproduced on pp. 101-104.]



Chapter 7: Aleatory

30

MARINER:

f $\text{♩} = 96$

TACET through Circle # 1

Chapter 7: Aleatory

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Chapter 7: Aleatorics

32

PLAYER 1- Gong, Chimes (with hard yarn mallets) and finger cymbals

PLAYER 2- 3 Brake Drums, Vibes (no pedaling), Triangle - Xylo may substitute for Vibes

PLAYER 3- Gong, Triangle, Xylophone

PLAYER 4- 3 Brake Drums; Finger Cymbal, Vibes

Each player begins in the circle that corresponds to his number (ie Player #1 in circle #1) and plays the events of that circle. Then the players move to their next circle and play that.

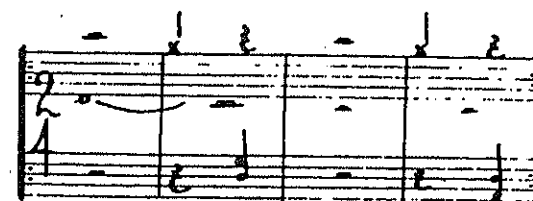
On mallet circles, stems that go up are 1's, and are to be played with the right hand. Stems going down are 4's, and are played with the L.H.

As each player finishes all the circles, he plays the event in the box, synchronizing with the Soloist (one at a time). When this event is performed in unison, the soloist and ensemble play the box one more time (in unison) to the end.

* Circle 4 should be performed twice before continuing on to circle 1.

Finger Cymbals
Triangles
Gongs

Brake Drums



Chapter 7: Aleatory

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2

The image displays a musical score for percussion music, consisting of seven staves of music arranged in a hierarchical, branching structure. The staves are connected by arrows, suggesting a sequence or a choice of paths. The music is written in a notation style that includes various rhythmic values, rests, and accidentals, typical of aleatory music. A large number '3' is positioned in the center of the page, between the second and third staves from the top.

The staves are as follows:

- Staff 1 (Top):** A single staff with a 3/4 time signature. It contains a series of rhythmic notations, including eighth and sixteenth notes, and rests.
- Staff 2:** A single staff with a 4/4 time signature. It contains a series of rhythmic notations, including eighth and sixteenth notes, and rests.
- Staff 3:** A single staff with a 7/8 time signature. It contains a series of rhythmic notations, including eighth and sixteenth notes, and rests.
- Staff 4:** A single staff with a 16/16 time signature. It contains a series of rhythmic notations, including eighth and sixteenth notes, and rests.
- Staff 5:** A single staff with a 6/16 time signature. It contains a series of rhythmic notations, including eighth and sixteenth notes, and rests.
- Staff 6:** A single staff with a 7/8 time signature. It contains a series of rhythmic notations, including eighth and sixteenth notes, and rests.
- Staff 7 (Bottom):** A single staff with a 16/16 time signature. It contains a series of rhythmic notations, including eighth and sixteenth notes, and rests.

The large number '3' is located in the center of the page, between the second and third staves from the top.

Chapter 7: Aleatory

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The musical score is composed of ten staves, each in 6/16 time. The notation includes various rhythmic values such as eighth and sixteenth notes, and rests. The staves are arranged in two columns of five. Arrows indicate a sequence of performance or recording, starting from the top left and moving generally downwards and to the right. A double bar line is present on the second staff of the left column and the eighth staff of the right column. A handwritten '4*' is located in the center of the page.

INSTRUCTIONS - THE UNIQUE SET OF RESULTS GIVEN BELOW WERE GENERATED BY THE STATE UNIVERSITY OF NEW YORK AT BUFFALO IN JULY, 1971. THE VALUES IN ELAPSED DURATION FROM THE BEGINNING OF THE COMPOSITION. THE POSITION OF THE VOLUME CONTROL AND THE TREBLE AND BASS CONTROLS FOR THE LEFT CHANNEL APPEARS, TURN THE KNOB IN QUESTION FULL LEFT. WHENEVER 4 APPEARS, TURN TO THE APPROPRIATE INTERMEDIATE POSITION. THESE THREE INTERMEDIATE POSITIONS ARE: 1, 2, 3. IF THE INSTRUMENT HAS ONLY ONE VOLUME CONTROL AND A BALANCE CONTROL, INTERPRET (

TIME	VOLUME		TREBLE		BASS		TIME	VOLUME		TREBLE
	CH.1	CH.2	CH.1	CH.2	CH.1	CH.2		CH.1	CH.2	CH.1
0.00	4	2	1	2	1	4	3.25	2	1	1
.05	4	2	1	2	1	4	3.30	2	1	1
.10	4	2	1	4	1	4	3.35	2	1	1
.15	4	2	1	4	0	4	3.40	2	1	1
.20	4	2	1	4	0	4	3.45	2	1	1
.25	4	2	1	4	0	4	3.50	4	0	0
.30	4	2	1	0	0	4	3.55	4	0	0
.35	4	2	1	0	4	4	4.00	4	0	0
.40	4	2	1	0	4	4	4.05	4	0	0
.45	4	2	1	0	4	4	4.10	4	0	0
.50	4	2	1	0	4	0	4.15	4	0	0
.55	1	2	0	0	4	0	4.20	4	0	0
1.00	1	4	0	0	4	0	4.25	4	0	0
1.05	1	4	0	1	4	0	4.30	4	0	0
1.10	0	4	0	1	4	0	4.35	4	0	0
1.15	0	4	0	3	4	0	4.40	3	3	2
1.20	0	4	4	4	3	1	4.45	3	3	2
1.25	0	4	4	4	3	1	4.50	3	3	2
1.30	0	4	4	4	3	1	4.55	3	3	2
1.35	0	4	4	4	3	1	5.00	0	3	2
1.40	0	2	4	4	4	1	5.05	0	3	2
1.45	0	2	4	4	4	1	5.10	0	3	2
1.50	0	2	1	4	4	1	5.15	0	4	4
1.55	0	2	1	4	4	1	5.20	0	4	4
2.00	0	2	1	1	4	1	5.25	0	4	4
2.05	0	2	1	1	4	1	5.30	0	4	3
2.10	1	2	1	1	0	4	5.35	0	4	1
2.15	1	2	3	1	0	4	5.40	0	4	1
2.20	1	2	3	1	0	4	5.45	4	4	1
2.25	1	2	3	1	0	4	5.50	4	4	1
2.30	3	2	3	0	0	4	5.55	4	3	1
2.35	3	2	3	0	0	0	6.00	4	3	1
2.40	3	1	3	0	0	0	6.05	4	3	1
2.45	3	1	3	0	0	0	6.10	4	3	1
2.50	2	2	3	0	0	0	6.15	4	3	1
2.55	2	2	3	0	3	0	6.20	4	3	1
3.00	2	2	3	0	3	0	6.25	4	3	1
3.05	2	2	0	0	3	0	6.30	4	3	3
3.10	2	2	0	0	3	0	6.35	4	0	3
3.15	2	2	1	0	3	0	6.40	4	0	3
3.20	2	1	1	3	3	3				

FOR THE LISTENER

SET NO. 10929

ERATED BY MEANS OF A PROGRAM RUN ON THE CDC-6400 COMPUTER LOCATED AT
 UES LISTED IN THE COLUMN LABELLED (TIME) REPRESENT 5 SECOND INCRE-
 THE NUMBERS IN THE SIX OTHER COLUMNS ARE RANDOMLY GENERATED SETTINGS
 T AND RIGHT CHANNELS, RESPECTIVELY, OF YOUR PREAMPLIFIER. WHENEVER 0
 TURN THE KNOB FULL RIGHT. WHENEVER 1, 2 OR 3 APPEARS, SELECT THE AP-
 S SHOULD BE EQUALLY SPACED BETWEEN THE EXTREMES. IF YOUR PREAMPLI-
 (CH. 1) AS THE VOLUME CONTROL AND (CH. 2) AS THE BALANCE CONTROL.

GOOD LUCK. - - - JOHN CAGE AND LEJAREN HILLER.

TREBLE		BASS		TIME	VOLUME		TREBLE		BASS	
CH.1	CH.2	CH.1	CH.2		CH.1	CH.2	CH.1	CH.2	CH.1	CH.2
1	3	3	3	6.45	2	0	4	0	4	4
1	3	3	3	6.50	2	0	4	0	1	4
1	3	3	3	6.55	2	0	4	0	1	4
1	3	3	3	7.00	2	0	4	2	1	4
1	3	1	3	7.05	2	0	4	0	1	4
0	3	1	3	7.10	4	0	4	0	1	4
0	3	1	3	7.15	4	0	4	0	1	4
0	3	0	4	7.20	4	0	4	0	2	4
0	3	0	4	7.25	4	0	4	0	2	1
0	3	0	4	7.30	4	1	4	0	2	1
0	3	0	4	7.35	4	1	3	0	2	1
0	2	0	4	7.40	4	1	3	2	2	1
0	4	0	4	7.45	4	1	4	2	3	1
0	4	0	4	7.50	4	1	4	2	3	1
0	4	0	4	7.55	4	1	4	2	3	1
2	4	0	4	8.00	4	1	4	2	3	1
2	4	3	4	8.05	4	1	2	2	3	1
2	4	3	4	8.10	1	1	2	2	3	1
2	4	3	1	8.15	1	2	2	2	3	1
2	4	3	1	8.20	1	2	2	2	0	1
2	3	3	1	8.25	1	2	2	2	0	0
2	3	3	1	8.30	0	2	2	2	0	0
4	3	3	1	8.35	0	2	2	0	0	0
4	3	1	1	8.40	0	2	4	0	4	0
4	3	3	1	8.45	0	2	4	0	4	0
3	3	3	1	8.50	0	3	2	0	4	0
1	3	2	1	8.55	0	3	2	2	4	0
1	3	2	2	9.00	0	3	2	2	4	0
1	3	2	2	9.05	0	3	2	2	3	3
1	3	0	3	9.10	0	3	2	2	3	3
1	3	0	3	9.15	0	3	2	2	3	3
1	3	0	1	9.20	0	3	2	2	3	3
1	0	0	1	9.25	0	2	2	2	3	3
1	0	0	1	9.30	4	2	0	2	4	1
1	0	0	1	9.35	4	2	0	2	4	1
1	0	0	1	9.40	4	2	0	4	4	1
1	0	0	1	9.45	4	2	0	4	4	1
3	0	0	4	9.50	4	2	2	4	4	1
3	0	0	4	9.55	4	2	2	4	4	1
3	0	4	4	10.00	4	1	2	1	0	1